

MULTIPURPOSE AND PROGRAMMABLE PAD RING FOR AN
INTEGRATED CIRCUIT

ABSTRACT OF THE DISCLOSURE

A multi-port SERDES transceiver includes multiple parallel and serial ports, and the flexibility to connect any one of the parallel or serial ports to another parallel or serial port. The ports include programmable pads that are capable of supporting multiple different data protocols, timing protocols, electrical specifications, and input-output functions. A management data IO pad also enables the transceiver to support different electrical requirements and data protocols at the same time. The substrate layout of the transceiver is configured so that the parallel ports and the serial ports are on the outer perimeter. A logic core is at the center, where the logic core operates the serial and parallel data ports, and the bus that connects the data ports. The bus can be described as a “ring” structure (or donut “structure”) around the logic core, and is configured between the logic core and the data ports.

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